IFPS Job Sheet No. 6

Using the Temporal Editor

Objective — This job sheet familiarize you with the Temporal Editor. Up to this point, all of the grid editing has been done with tools in the Grid Manager and Spatial Editor spatially. The Temporal Editor presents the data in a time-series format data temporally. This time-series represents the average value over an area that you define (the current edit area) as a function of time.

Editing Scalar Data Temporally

1. Before you begin: Set up your GFE so that the spatial and temporal editors are visible. Load T (temperature) via the Weather Element->Weather Element Browser... dialog
2. Make or find a temperature grid and display it as an image in the spatial editor.
3. Clear the edit area by clicking MB1 on the Clear button.
4. Use the Select Points tool to define an edit area the size of a few counties.
5. Find the T (temperature) weather element in the temporal editor. Vertically stretch the size of the temporal editor pane so that there's plenty of room to see the time series display.
6. In the temporal scale, located to the left of the time series display, click MB2 to zoom in until the minimum and maximum values are about 20 degrees F apart.
7. Find the data point in the time series that represents the grid displayed in the spatial editor. This point is identified by the dotted yellow line.
8. Click MB1 about 10 degrees F above the data point. Note the change in the spatial editor display. All the points you identified in the spatial editor have been assigned the value you selected in the temporal editor.
9. Initialize about 12 hours worth of temperature data from you favorite model. Use the interpolation facility (Grids->Interpolate->By Gaps) to fill in the gaps and get a smooth time-series curve.

10. Back in the temporal editor pane, move the cursor to somewhere near left side of the time-series display. Move the cursor over one of the horizontal lines that display the temporal values and press and hold MB1 and slowly drag horizontally to define a new temperature curve. As you move the cursor to the next data point, it should snap to your cursor position. Each time this happens, you are modifying data in a different grid. Note that you MUST start the edit operation over one of the displayed values. Starting the operation in a gap will not modify any data.

11. Release MB1.

12. Step through your newly-modified grids using the Grid Manager or the Animator to see that you modified a series of grids with one edit operation.

13. Repeat this exercise until you are comfortable using the Adjust Scalar temporal tool. This and all the temporal tools are capable of modifying a large quantity of data with only a few edit operations. Used properly, these tools can save you lots of time.

Editing Vector Data Temporally

1. Before you begin: Set up your GFE so that the spatial and temporal editors are visible. Load Wind via the Weather Element->Weather Element Browser... dialog. Make sure that the GFE->Editing Preferences->Temporal Edit Mode: Relative is deselected..

2. Make or find a Wind grid and display it as an image in the spatial editor

3. Set the Vector edit mode located main menu bar GFE->Editing Preferences->Vector Edit Mode->Both to edit both magnitude and direction.

4. Use the Select Points tool to define an edit area the size of a few counties.

5. Find the Wind weather element in the temporal editor. Vertically stretch the size of the temporal editor pane so that there's plenty of room to see the time series display.

6. In the temporal scale, located to the left of the time series display, click MB2 to zoom in until the minimum and maximum values are about 20 knots F apart. Clicking MB1 zooms out. Dragging MB1 pans the scale.

7. Find the data point in the time series that represents the grid displayed in the spatial editor. This point is identified by the dotted yellow line.

8. Click MB1 about 10 knots above the data point. Note the change in the spatial editor display. All the points you identified in the spatial editor have been assigned the value you selected in the temporal editor.

9. Release MB1.

10. Press and hold MB1 and move the cursor up or down to adjust the vector data point again. Note how the wind barb updates as you adjust the magnitude.

11. Release MB1.

If you're editing wind magnitude only, the vector adjust tool works just like the scalar adjust tool. It's when you edit the direction that things get interesting.

1. Press and hold down the Shift key on your keyboard.
2. Move the cursor over any wind data point, press and hold MB1 and adjust. Note that the wind direction is changing while the magnitude remains constant
3. Release MB1.

This exercise demonstrates that with the Shift button up, the temporal adjust vector tool changes the magnitude. With the Shift button down, the tool changes the wind direction.

Editing Weather Data Temporally

1. Before you begin: Set up your GFE so that the spatial and temporal editors are visible. Load Wx via the Weather Element->Weather Element Browser... dialog. **Make sure that the TE Edit Mode: Relative button is still deselected.**
2. Make or find a Wx grid and display it as an image in the spatial editor
3. Use the Select Points tool to define an edit area the size of a few counties
4. Find the Wx weather element in the temporal editor. Vertically stretch the size of the temporal editor pane so that there's plenty of room to see the time series display
5. In the Spatial Editor legend, select a pickup value by clicking MB2. You may need to invoke the set value dialog to add additional weather types.
6. Find the data point in the time series that represents the grid displayed in the spatial editor. This point is identified by the dotted yellow line.
7. Click MB1 on this data point in the Wx pane of the temporal editor. You should see the temporal editor paint the same color/pattern as you selected in the spatial editor legend. The spatial editor will show you that the area that you selected in Step 2 has been set to this new value.

The Temporal Set Value tool does not support drag operations as with the scalar and vector tools. Only MB1 clicks will modify data in the Wx pane

Modify scalar grid values in Relative Edit mode

The previous temporal editor exercises demonstrated how TE Absolute mode works. Every time you make a change to the temporal value, that value is assigned to the entire area you selected in the spatial editor. TE Relative mode works differently in that the relative change is applied to the selected area. For example, if you made a +5 degree change to your temperature time-series, 5 degrees is added to every point in the selected area. This preserves the relative gradients in the area which is sometimes very desirable.

1. Before you begin: Set up your GFE so that the spatial and temporal editors are visible. Load T (temperature) via the Weather Element->Weather Element Browser... dialog if T is not loaded already.

2. From the main menu, check to make sure that GFE->Editing Preferences->Temporal Editor Mode: Relative is on.

3. Make or find a temperature grid and display it as an image in the spatial editor

4. Use the Select Points tool to define an edit area the size of a few counties. Try to select an area where there is a temperature gradient.

5. Find the T (temperature) weather element in the temporal editor. Vertically stretch the size of the temporal editor pane so that there's plenty of room to see the time series display.

6. In the temporal scale, located to the left of the time series display, click MB2 to zoom in until the minimum and maximum values are about 20 degrees F apart.

7. Find the data point in the time series that represents the grid displayed in the spatial editor. This point is identified by the dotted yellow line.

8. Adjust this data point about 5 to 10 degrees higher. Note the change in the spatial editor display. The 5-10 degree change you applied to the time-series point has been applied to all of the points inside the selected area. The gradient that was present before the temporal edit should still exist.

9. Use the MB1 drag operation in the temporal editor to modify several grids with the same operation. Step through these edited grids to verify that the data were modified inside the selected area.